FINDING OF NO SIGNIFICANT IMPACT FOR THE TOWN OF MANHATTAH, MONTANA WATER SYSTEM IMPROVEMENTS

TO: ALL INTERESTED PERSONS

Date:	November 21, 2014
Action:	Funding Drinking Water System Improvements
Location of Project:	Town of Manhattan, Gallatin County, Montana
DEQ DWSRF Loan:	$ 752,000
DOC TSEP Grant (# MT-TSEP-CG-15-743):	$ 750,000
USACE WRDA Grant:	$ 175,000
DNRC RRGL Grant:	$ 100,000
Total Project Cost:	$1,777,000

An environmental assessment (EA) has been prepared by the Montana Department of Environmental Quality (DEQ) for proposed funding for improvements to the Town of Manhattan's water storage, transmission, and pumping systems. The proposed improvements include the construction of a new 300,000 gallon elevated steel water storage tank, installation of approximately 650 feet of 12-inch PVC transmission main, replacement of a booster pump and a new radio telemetry control system. The purpose of the project is to make improvements to the town's water supply system needed to protect public health.

The affected environment will be the incorporated town of Manhattan and all area served by the public water supply system. The human environment affected will include residents and visitors of the aforementioned areas. Based on the EA, the project is not expected to have any significant adverse impacts upon terrestrial and aquatic life or habitat, including endangered species, water quality or quantity, air quality, geological features, cultural or historical features, or social quality.

As indicated above, this project will be funded in part with a low interest loan through the Montana Drinking Water State Revolving Fund Program, administered by the Montana Department of Environmental Quality and the Montana Department of Natural Resources and Conservation. The loan will be repaid by a General Obligation Bond tax assessment.

The DEQ utilized the following references in completing its EA for this project: a Uniform Application and Uniform Environmental Checklist for Montana Public Facility Projects, a Manhattan Water System Preliminary Engineering Report (dated April 2012) and a Manhattan Engineering Design Report (dated September 2014) all prepared by Great West Engineering, the community's consulting engineer. In addition to these references, letters were sent to; Montana Department of Environmental Quality (MDEQ), Montana Department of Fish, Wildlife & Parks (FWP), Montana Department of Natural Resources & Conservation (DNRC) Floodplain Management, United States Fish and Wildlife Service (USFWS), Montana State Historic Preservation Office (SHPO), Montana Department of Transportation (MDOT), and the United States Department of

Transportation Federal Highway Administration (FHWA). Response letters have been received from all of the listed agencies. These references are available for review upon request by contacting:

Robert Ashton
Montana DEQ
State Revolving Fund Program
P.O. Box 200901
Helena, MT 59620-0901
Phone (406) 444-5316
Email: rashton@mt.gov

or

Dave Rowell, Mayor
Town of Manhattan
P.O. Box 96
Manhattan, MT 59741
(406) 284-3235

Comments on this finding or on the EA may be submitted to DEQ at the above address. After evaluating substantive comments, DEQ may revise the EA or determine if an EIS is necessary. This finding will stand if no substantive comments are received during the 30-day comment period or if substantive comments are received and evaluated and the environmental impacts are still determined to be non-significant.

Signed,

Todd Teegarden, Chief
Technical & Financial Assistance Bureau

TOWN OF MANHATTAN - WATER SYSTEM IMPROVEMENTS PROJECT

ENVIRONMENTAL ASSESSMENT

I. COVER SHEET

A. PROJECT IDENTIFICATION

Applicant:	Town of Manhattan, Montana
Address:	P.O. Box 96, Manhattan, MT 59741
DOC, TSEP Project No.	MT-TSEP-15-743
DEQ E.Q. No.	15-1312

B. CONTACT PERSON

Name:	David Rowell, Mayor Town of Manhattan, Montana
Address:	P.O. Box 96 Manhattan, MT 59741
Telephone:	(406) 284-3235

C. ABSTRACT

The Town of Manhattan, through a 2012 Preliminary Engineering Report (PER) and a 2014 Engineering Design Report, both prepared by Great West Engineering, has investigated the needs of their public water system. The PER examined all components of the system including supply, transmission, storage, and distribution. The PER notes that the water system does not have storage and relies on pumps to provide the needed water system pressure and flow. The lack of water storage does not meet Montana Department of Environmental Quality (MDEQ) standards and results in inadequate fire flows. The absence of storage also contributes to the lack of reliable supply and pressure for the water system services. Adding storage to the water system is necessary to improve system reliability and pressure and improve fire protection.

Alternatives for remedying the storage system deficiency were developed and an alternatives evaluation was completed in the 2012 PER with additional analysis done in 2014 and detailed in the proposed water storage tank Engineering Design Report. Based on the analysis, specific water system improvements were recommended. The recommended alternatives include the following improvements:

Storage Improvements

- Construct a 300,000 gallon elevated steel water storage tank.

Transmission System Improvements

- Install 650 lineal feet of 12-inch PVC transmission main from the new storage tank to the distribution system at Farmall Lane.

Booster Station and telemetry system Improvements

- Replace the existing booster pump to account for the new system hydraulics.
- Add a new radio telemetry control system for the storage tank.

The project will be funded by a combination of federal and state grants and loans. This Environmental Assessment (EA) examines the work as described in the 2012 PER, the submitted State Revolving Fund Loan Application and the project's 2014 Engineering Design Report. Based on this review, environmentally sensitive characteristics such as wetlands, floodplains and threatened or endangered species are not expected to be adversely impacted as a consequence of the proposed Town of Manhattan Water System Improvements Project. No significant long-term environmental impacts were identified. The Montana Department of Commerce, Treasure State Endowment Program (TSEP), has reviewed this EA for compliance with MEPA and concurs with the finding of no significant impact.

Under Montana law (75-6-112, MCA), no person, including a municipality or county, may construct, extend, or use a public water system until the DEQ has reviewed and approved the plans and specifications for the project.

D. COMMENT PERIOD

Thirty (30) calendar days.

II. PURPOSE AND NEED FOR ACTION

The Town of Manhattan's water system consists of several components. The main source of water is an infiltration gallery located south of town. The water from the infiltration gallery gravity feeds from a caisson via a 12-inch transmission main. A gas chlorination facility is located on the transmission main before it enters the distribution system. A booster pump station is located on the transmission line just south of town where the pressure is boosted to serve the system.

Water storage is not currently provided on the system and the town relies on the booster pump and well pumps to keep the system pressurized. Two wells are currently utilized when system demands exceed the capacities of the spring supply. Manhattan is also currently working on obtaining the water rights for additional water supply wells. The water distribution system consists of six to 12-inch PVC and asbestos cement pipes. Fire hydrants are connected to the system for fire protection and valves are located throughout the system to facilitate maintenance and repair.

Recent improvements to Manhattan's water system include new water meters and backflow prevention on each service connection, replacement of 2,800 feet of leaking transmission main, and installation of back-up power generators at the two wells locations and the booster station.

The 2012 PER provides a comprehensive engineering analysis of Manhattan's existing water system, future demands and recommended improvements. The following is a summary of the primary problems identified in the PER.

STORAGE

Health and safely of the public is by far the largest concern for any community water system. The Town of Manhattan currently has no water storage, and this deficiency could potentially impact the health and safety of the public. Inadequate fire flows, low system pressures during peak demands, and lack of storage capacity are the largest community concerns.

The proposed drinking water storage, transmission, pumping and telemetry system improvements are necessary in order to address existing deficiencies and to continue to provide Manhattan's water users with a safe, reliable water supply.

III. ALTERNATIVES INCLUDING THE PROPOSED ACTION AND COSTS

Alternatives analyzed in the 2012 Water System PER include the "do nothing" option or adding storage to meet current MDEQ requirements and water system needs.

The "no action" alternative was not considered beyond the initial screening stage. This alternative will not remedy the problems currently being experienced due to the lack of water storage. Likewise the addition of variable frequency drives on the existing well and booster pump was eliminated as this alternative would not provide the fire flows needed in town.

The PER examined the capital costs and net present worth costs of the viable alternatives to correct the lack of water storage. In addition to cost analysis, the PER included an impact analysis of the alternatives based on technical feasibility, environmental impacts, financial feasibility, public health and safety, operation and maintenance and public comments. Based on these criteria, the preferred storage alternative was selected.

Storage Improvements

The 2012 PER determined the required Manhattan system storage need at 300,000 gallons. This includes the system's 20 year design operational flow and fire flow. The feasible alternatives examined for adding storage to Manhattan's water system include:

- New 300,000 gallon buried pre-stressed concrete water storage tank
- New 300,000 gallon on-grade glass lined bolted steel water storage tank
- New 300,000 gallon on-grade epoxy coated bolted steel water storage tank
- New 300,000 gallon on-grade welded steel water storage tank
- New 300,000 gallon elevated steel water storage tank

The 2012 PER recommended that a new 300,000 gallon on-grade glass lined bolted steel water storage tank be built south of town on land with the required elevation to provide the needed system pressure. This alternative would require the town to purchase one acre for the tank site, install approximately 9,500 feet of transmission main and obtain the required easements for the transmission main. The 20-year present worth cost for this alternative was estimated at $1,601,000. However the Town of Manhattan was unable to obtain the land and easements needed to proceed with this option and the 2014 Engineering Design Report alternative analysis recommended selection of a new 300,000 gallon elevated storage tank. The elevated tank can be constructed in town on property with an existing easement for the water storage tank and thus simplifies land and easement requirements. The 2012 PER estimated the 20-year present work cost for the elevated storage tank alternative at $1,635,600.

The proposed elevated water storage tank project will require replacing the existing booster pump to facilitate new system hydraulics, the installation of approximately 650 feet of transmission main and a new radio telemetry system to help control the flow of water.

Cost

For the proposed elevated water storage tank project, the Town of Manhattan has received funding commitments of:

$ 750,000	Grant – Montana Department of Commerce/Treasure State Endowment Program (TSEP)
$ 100,000	Grant – Montana Department of Natural Resources and Conservation/Renewable Resource Grant and Loan Program (RRGL)
$ 175,000	Grant – US Army Corps of Engineers Water Resource Development Act (WRDA)
$ 752,000	Loan – Montana Department of Environmental Quality, Drinking Water State Revolving Fund Loan Program (DWSRF). This amount includes $376,000 that may be forgiven.
$1,777,000	**Total Project Funding**

The Town of Manhattan expects to be able to complete all of the proposed water system improvements with the committed funding.

User Rates

The Uniform Application for Funding submitted by the Town of Manhattan shows average residential water system users pay approximately $34 per month. The Uniform Application also indicated that user rates would increase by approximately five dollars to cover the proposed DWSRF loan repayment.

IV. AFFECTED ENVIRONMENT

A. STUDY AREA

The Town of Manhattan is a small farming and ranching community located approximately nine miles northwest of Belgrade, Montana. It is bordered by Interstate 90 on the southwest. The Gallatin River is located approximately two miles east of Manhattan and flows to the north and east. The Burlington Northern Railway splits the Town of Manhattan into a south and north half. The location of Manhattan can be seen on the enclosed map in Figure 1.

The proposed storage tank will be located on property owned by Farmall LLC with an easement on the plat for the placement of the water storage tank. The proposed transmission main, between the new tank and the existing distribution system, will use an existing utility easement (see figure 2) with a connection to the existing system along Farmall Lane. The booster pump replacement will occur at the town's booster pump building located just south of town.

B. POPULATION AND FLOW PROJECTIONS

Population Projections

Historically, Gallatin County experienced an increase in population from the 1970s to the 2010 census. The Town itself saw an increase in population since the 1970s to current. From 2000 to 2010, the population grew from 1,396 to 1,520, an 8.8% growth over ten years. A population increase of 1.8% annually will be assumed for the 20 year planning period to allow for growth in the community. This correlates to a design year (2032) population of 2,128. This growth is anticipated to occur throughout the town, as no areas of concentrated growth are identified.

Flow Projections

Source water in Manhattan is metered at both wells and the spring. Individual and commercial water usage is recorded on a monthly basis with meters which were installed in 2010. The 2012 PER calculated Manhattan's water demand using the source water metering records for water produced by both the North and South Wells and the spring supply in 2011. This analysis provided the average and max day data showing an average day use of 179 gallons per capita day (gpcd) and a max day peaking coefficient of 2.47. The resulting design year (2032) flows are projected to be 264 gallons per minute (gpm) for the average daily flow and 652 gpm for the maximum day flow.

Currently Manhattan used two wells and a spring to meet water demand. The existing sources can provide a total of 1,250 gpm, or 750 gpm with the largest source out of service. Manhattan is in the process of obtaining additional water rights for the Pioneer Crossing well that would add another 520 gpm to their supply. Manhattan also has two additional wells that could supply 750 gpm if water rights are obtained. The required fire flow for Manhattan is 2,500 gpm for a two-hour duration. The current source water capacity is sufficient to meet the domestic water demands but falls short in meeting the projected domestic flows plus fire flows. This deficiency further justifies the need for adding water storage to the system.

C. NATURAL FEATURES

The Town of Manhattan lies in the intermountain valley of the Gallatin River. The topography is relatively flat, soils are suitable and utilized for farming in the vicinity. Manhattan is a small town with little commercial activity. Groundwater is plentiful and the Gallatin River flows nearby.

The Town of Manhattan is served by three sources of supply including a spring and two wells. Three additional wells are currently pursuing water rights.

D. MAPS

Figure 1 shows the general location of the Town of Manhattan along Interstate 90. Figure 2 shows the proposed Manhattan elevated storage tank and transmission main project site location.

Figure 1. General Location of Manhattan Montana

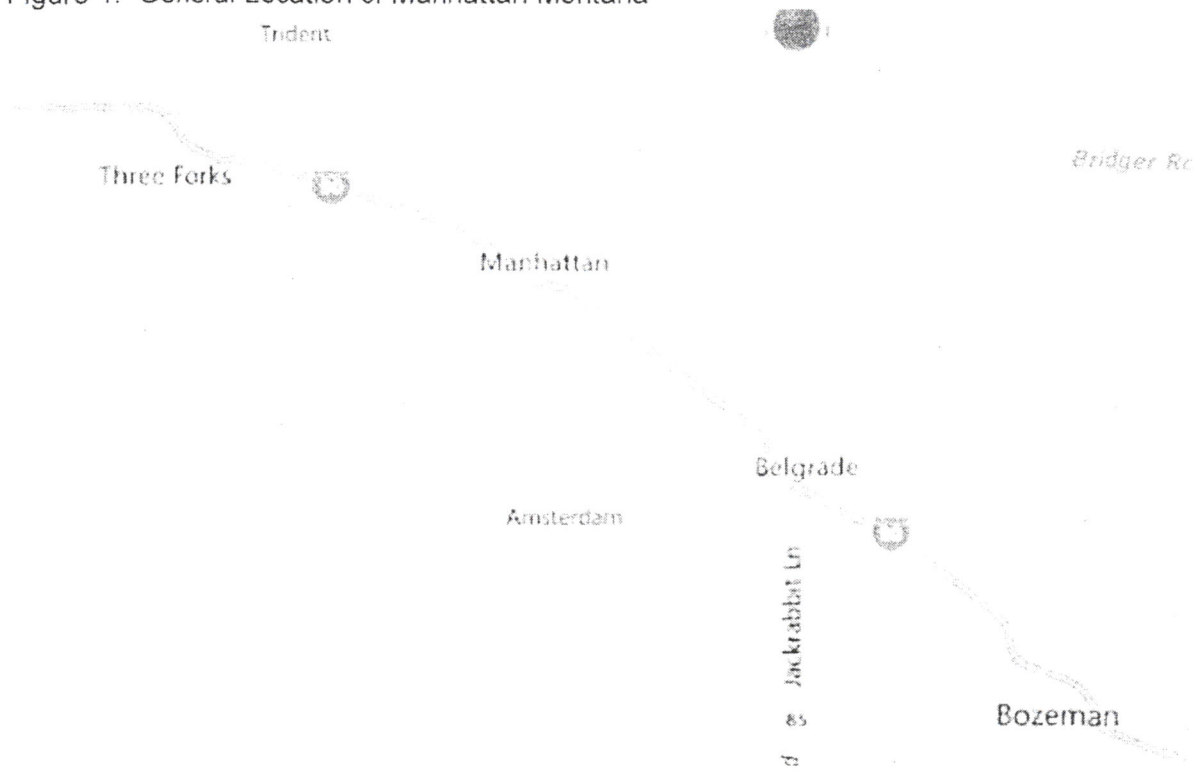
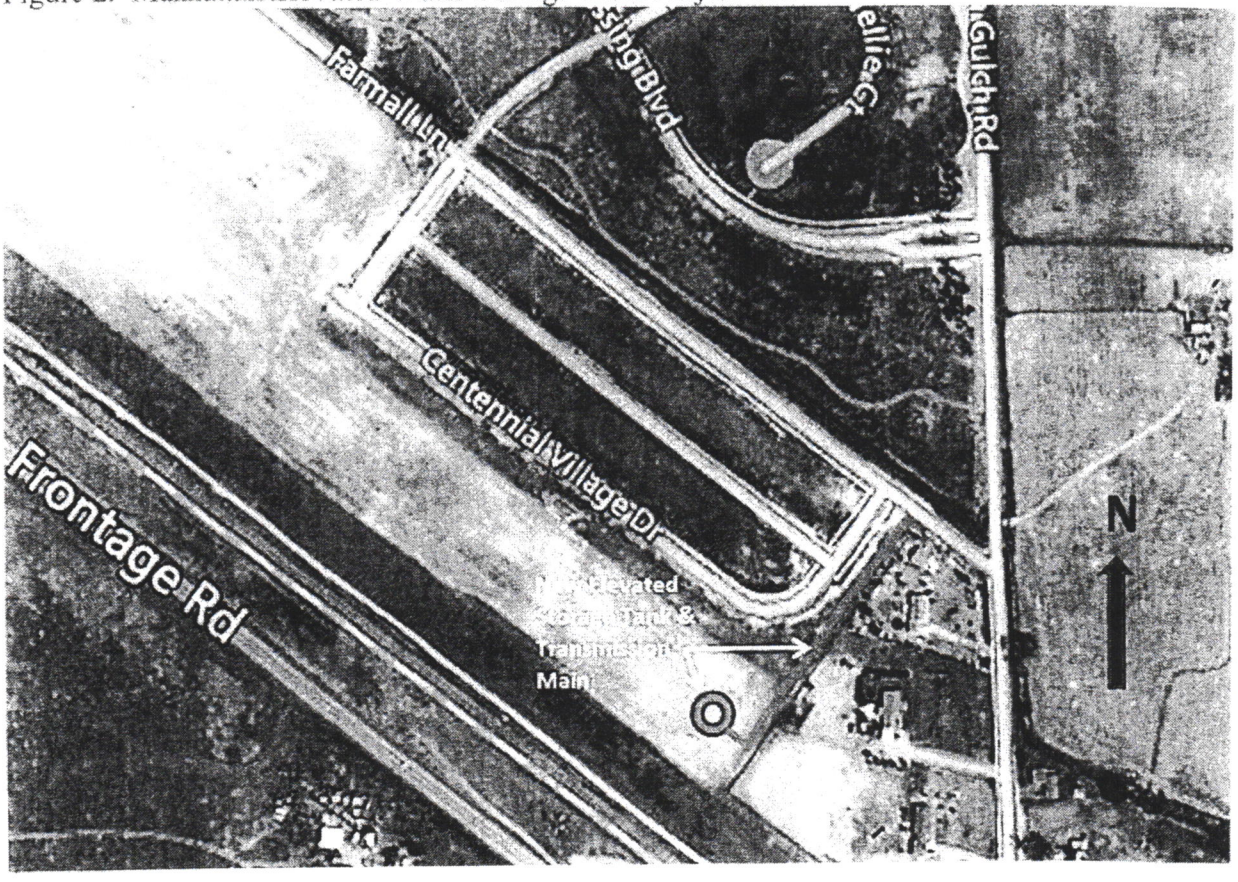


Figure 2. Manhattan Elevated Water Storage Tank Project Site



V. DIRECT AND INDIRECT ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

No adverse impacts to the environment are anticipated by implementation of the proposed water system improvements. All of the storage tank, transmission main and pump replacement improvements will be located within existing easements and right-of-ways.

A. DIRECT ENVIROMENTAL IMPACTS

Soils Suitability, topographic and Geologic Constraints

Soils in the area are suitable for the construction of the elevated tank and transmission main. Topography is appropriate for pipeline installation and concrete structures and will not result in environmental damage. The slopes in the project area are two to eight percent. The soils in the area are described as somewhat unstable for excavations and will have unstable excavation walls. Proper trench excavation and safety will be necessary.

Land Use

According to the National Resource Conservation Service Web Soil Survey, the land is classified as farmland of local importance; however, it is located within a developed subdivision and no farming is currently taking place. The land will be temporarily disturbed and then restored to original condition.

Floodplains and Wetlands

The project area does not lie in a designated floodplain. The Gallatin River floodplain lies approximately 1.5 miles northeast of the project site.

Historical/Cultural Resources

The Montana State Historic Preservation Office (SHPO) was contacted to complete a cultural resource file search for the project area. A letter from SHPO stated that, "there has been one previously recorded site within the designated area." The letter also stated, "that as long as there will be no disturbance or alteration to structures over fifty years of age we feel that there is a low likelihood cultural properties will be impacted."

The project construction specifications will require the contractor to notify SHPO, through the project engineer, in the event cultural materials are discovered during construction.

Biological Resources and Vegetation

Two animal species of concern where identified in the project area using the Natural Heritage Program (the Veery Bird and the Greater Short-horned lizard) while no plant species of concern were noted.

A letter from the United States Department of the Interior Fish and Wildlife Service said that "we do not anticipate adverse effects to threatened, endangered, proposed or candidate species or critical habitat to result from the project alternatives as proposed."

Surface Water and Groundwater

The proposed water system project will have no impacts on surface water/water quality, quantity or distribution. Likewise, the project will have no impact on groundwater resources. Available groundwater information, in the proposed project area, indicates that all construction will be above the groundwater elevation.

Socio-Economic/Environmental Justice and Public Health

There is no known disproportionate increase in environmental or public health impacts to minority and low-income persons due to the proposed water improvements project. All persons would benefit from the enhanced water system, and fire protection from both a public health and safety

VIII. REFERENCE DOCUMENTS

The following documents were utilized in the environmental review of this project and are considered to be part of the project file:

A. Town of Manhattan, Montana – Water System Preliminary Engineering Report (PER), April, 2012, prepared by Great West Engineering, Helena, Montana.
B. Town of Manhattan, Montana – Water System Improvements Engineering Design Report, September, 2014, prepared by Great West Engineering, Helena, Montana.
C. Town of Manhattan, Montana – Uniform Application Form for Montana Public Facility Projects, April 2012, Prepared by the Town of Manhattan, Montana.
D. Uniform Environmental Checklist for Montana Public Facility Projects, April 2014, prepared by Great West Engineering, Helena, Montana.

IX. AGENCIES CONSULTED

Several federal and state government agencies were sent letters in March, 2012 requesting a review of the proposed water system improvements project. Letters were again sent in April, 2014 when the selected alternative changed from an on-grade steel tank south of town to an elevated tank in town. The agencies that provided recent comments include the following:

A. U.S. Fish and Wildlife Service reviewed the project and a comment letter dated April 29, 2014 stated "given that the proposed project area is previously disturbed and project activities are expected to occur within developed property as described in your letter and accompanying materials, we do not anticipate adverse effects to threatened, endangered, proposed, or candidate species or critical habitat to result from the project alternatives as proposed."
B. U.S. Department of Transportation Federal Highway Administration (FHWA) reviewed the project and a comment letter dated April 28, 2014 stated "After reviewing the proposal, it does not appear that the project will impact any facilities that FHWA has oversight on."
C. Montana Fish, Wildlife and Parks reviewed the project and a comment letter dated April 15, 2014 stated "we do not identify any major concerns at this time."
D. Montana Department of Natural Resources and Conservation (DRNC) reviewed the project and a comment email dated April 28, 2014 stated "water tanks in distribution systems are not considered reservoirs and therefore Manhattan would not require a water right application to add the storage tank as long as the flow rate and volume of the water right is not being increased."
E. Montana Department of Transportation (MDOT) reviewed the project and a comment letter dated April 22, 2014 stated "This proposal does not appear to directly impact MDT right-of-way based on the submittal received."
F. Montana Historical Society's Historic Preservation Office reviewed the project and a comment letter was sent April 16, 2014. The letter states, "As long as there will be no disturbance or alteration to structures over fifty years of age we feel that there is a low likelihood cultural properties will be impacted. We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time."
G. Montana Department of Environmental Quality (MDEQ) responded with a letter dated April 16, 2014 noting that MDEQ's full review would occur as part of the project's plan and specification review and approval process. The letter also noted the potential need to obtain DEQ permits associated with construction projects.

X. RECOMMENDATION FOR FURTURE ENVIRONMENTAL ANALYSIS

[ ] EIS [ ] More Detailed EA [X] No Further Analysis

Rationale for Recommendation. Through this EA, The Montana DEQ has verified that none of the adverse impacts of the Manhattan Water System Improvements Project are significant. Therefore, an environmental impact statement is not required. Richard Knatterud, P.E., representing TSEP has reviewed this EA and is in concurrence with the MDEQ finding. Based on this EA, a Finding of No Significant Impact (FONSI) will be issued and legally advertised in the local newspaper and distributed to a list of interested government agencies. Comments regarding the project will be received for 30 days before final approval of the EA is granted. This environmental review was conducted in accordance with the Administrative Rules of Montana (ARM) 17.4.607 thru 17.4.610.

EA Prepared By:

Robert Ashton — Date: 11/17/2014

EA Reviewed By:

Marc Golz, P.E. — Date: 11/20/2014